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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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10/760,404

01/21/2004

Toshinobu Sugiyama

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06/12/2006

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EXAMINER

ROSENBERGER, RICHARD A

ART UNIT

PAPER NUMBER

2877

DATE MAILED: 06/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

5/2

| | | | |
|------------------------------|---|--|--|
| Office Action Summary | Application No. 10/760,404 | Applicant(s) SUGIYAMA, TOSHINOBU | |
| | Examiner Richard A. Rosenberger | Art Unit 2877 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8-10 is/are allowed.
- 6) ☒ Claim(s) 1 and 3-7 is/are rejected.
- 7) ☐ Claim(s) 2 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 January 2004 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>5/12/2004</u> . | 6) <input type="checkbox"/> Other: ____ |

1. Claim 6 is objected to. Claim 6 appears to be identical to claim 4, including its dependency.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 3, and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Gamache et al (US 5,193,120).

As in claims 1 and 7, the Gamache et al reference teaches a laser light source (18) with means (20) for dividing the laser light into a plurality of beams. The divided beams have an angle between them, which is predetermined by the structure of the splitting element 20; the claims 1 and 7 do not appear to exclude a collimator (such as element 22 in the reference) in the system after the division by the optical means for dividing, and

the reference states that the collimation, although convenient, is optional (column 62-64).

As in claim 3, the dividing element of the reference may be a hologram (column 4, lines 10-14).

5. Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gamache et al (US 5,193,120) in view of Harding (US 5,189,49).

See above for a discussion of the Gamache et al reference.

The Gamache et al reference does not appear to teach a scanning mirror as in claims 4-6. Harding shows that it is known in the art to provide a scanning mirror (54,94 in figure 3) to shift the projected lines. It would have been obvious to provide such a scanning mirror in the system of Gamache et al in order to shift the lines to place them at different locations on the object in order to increase the resolution by observing the lines at the different locations to which they have been moved.

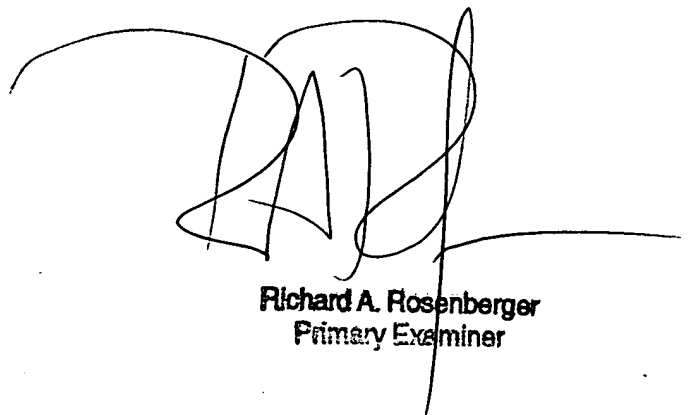
6. The art does not appear to teach or suggest the claimed determination of whether or not an interval between the plurality of reflected laser light beams corresponds to the predetermined angle. Thus claims 8-10 are allowable and claim 2 contains allowable subject matter. Claim 2 is objected to as being dependent upon an unallowed parent claim, but would be allowable if rewritten in independent form including all of the limitations of its parent claim.

7. Tu et al (US 6,868,194) shows a similar system in which a plurality of lines are projected onto an object for measuring its three-dimensional shape. Although Tu et al discusses the problem of not detecting projected lines that should be detected, it does not appear to discuss the erroneous detection of light that should not be detected as discussed in the instant specification in, for example, page 14, lines 5-10, and does not appear to teach or suggest the claimed determination of whether or not the interval corresponds to the angle separating the projected lines.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard A Rosenberger whose telephone number is (571) 272-2428. The examiner can normally be reached on Monday through Friday during the hours of 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr. can be reached on (571) 272-2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

R. A. Rosenberger
5 June 2006



Richard A. Rosenberger
Primary Examiner